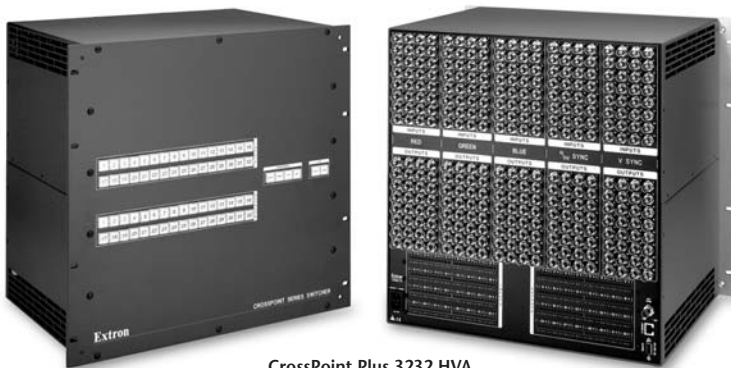


# CrossPoint Plus Series

ULTRA-WIDEBAND RGB & VIDEO  
AND/OR STEREO AUDIO

- 20 models – 8x4 through 32x32
- 425 MHz (-3dB) RGB video bandwidth, fully loaded
- Digital Sync Validation Processing (DSVP™)
- Triple-Action Switching™
- Large backlit and easy to label buttons (larger models)
- I/O grouping
- RS-232/422 control
- Extron Simple Instruction Set (SIS™)
- Audio breakaway
- Input audio gain & attenuation
- Global memory presets
- Downloadable firmware via RS-232/422 control
- IP Control for off-site control (some models)
- Web page hosting capabilities (some models)



CrossPoint Plus 3232 HVA

The Extron CrossPoint Plus Series of ultra-wideband, analog RGBHV matrix switchers provide convenient off-the-shelf solutions for centralized high-performance routing applications. All 20 models of CrossPoint Plus Series Matrix Switchers deliver high bandwidth, input flexibility, and versatile control options.



## Extron® Electronics

[www.extron.com](http://www.extron.com)

# CrossPoint Plus Models



CrossPoint Plus 88HVA



CrossPoint Plus 128HVA



CrossPoint Plus 1616HVA



CrossPoint Plus 3216HVA



CrossPoint Plus 3232HVA

# PART NUMBERS

## CrossPoint Plus 84HV/84HVA

| 8 x 4 Ultra Wideband Matrix Switchers | Part Number |
|---------------------------------------|-------------|
| CrossPoint Plus 84HV .....            | 60-337-02   |
| CrossPoint Plus 84HVA .....           | 60-337-01   |

## CrossPoint Plus 88HV/88HVA

| 8 x 8 Ultra Wideband Matrix Switchers | Part Number |
|---------------------------------------|-------------|
| CrossPoint Plus 88HV .....            | 60-336-02   |
| CrossPoint Plus 88HVA .....           | 60-336-01   |

## CrossPoint Plus 124HV/124HVA

| 12 x 4 Ultra Wideband Matrix Switchers | Part Number |
|--|-------------|
| CrossPoint Plus 124HV .....            | 60-335-02   |
| CrossPoint Plus 124HVA .....           | 60-335-01   |

## CrossPoint Plus 128HV/128HVA

| 12 x 8 Ultra Wideband Matrix Switchers | Part Number |
|--|-------------|
| CrossPoint Plus 128HV .....            | 60-334-02   |
| CrossPoint Plus 128HVA .....           | 60-334-01   |

## CrossPoint Plus 168HV/168HVA

| 16 x 8 Ultra Wideband Matrix Switchers | Part Number |
|--|-------------|
| CrossPoint Plus 168HV .....            | 60-333-02   |
| CrossPoint Plus 168HVA .....           | 60-333-01   |

## CrossPoint Plus 1616HV/1616HVA

| 16 x 16 Ultra Wideband Matrix Switchers | Part Number |
|---|-------------|
| CrossPoint Plus 1616HV .....            | 60-332-02   |
| CrossPoint Plus 1616HVA .....           | 60-332-01   |

## CrossPoint Plus 2412HV/2412HVA

| 24 x 12 Ultra Wideband Matrix Switchers | Part Number |
|---|-------------|
| CrossPoint Plus 2412HV .....            | 60-470-02   |
| CrossPoint Plus 2412HVA .....           | 60-470-01   |

## CrossPoint Plus 2424HV/2424HVA

| 24 x 24 Ultra Wideband Matrix Switchers | Part Number |
|---|-------------|
| CrossPoint Plus 2424HV .....            | 60-468-02   |
| CrossPoint Plus 2424HVA .....           | 60-468-01   |

## CrossPoint Plus 3216HV/3216HVA

| 32 x 16 Ultra Wideband Matrix Switchers | Part Number |
|---|-------------|
| CrossPoint Plus 3216HV .....            | 60-471-02   |
| CrossPoint Plus 3216HVA .....           | 60-471-01   |

## CrossPoint Plus 3232HV/3232HVA

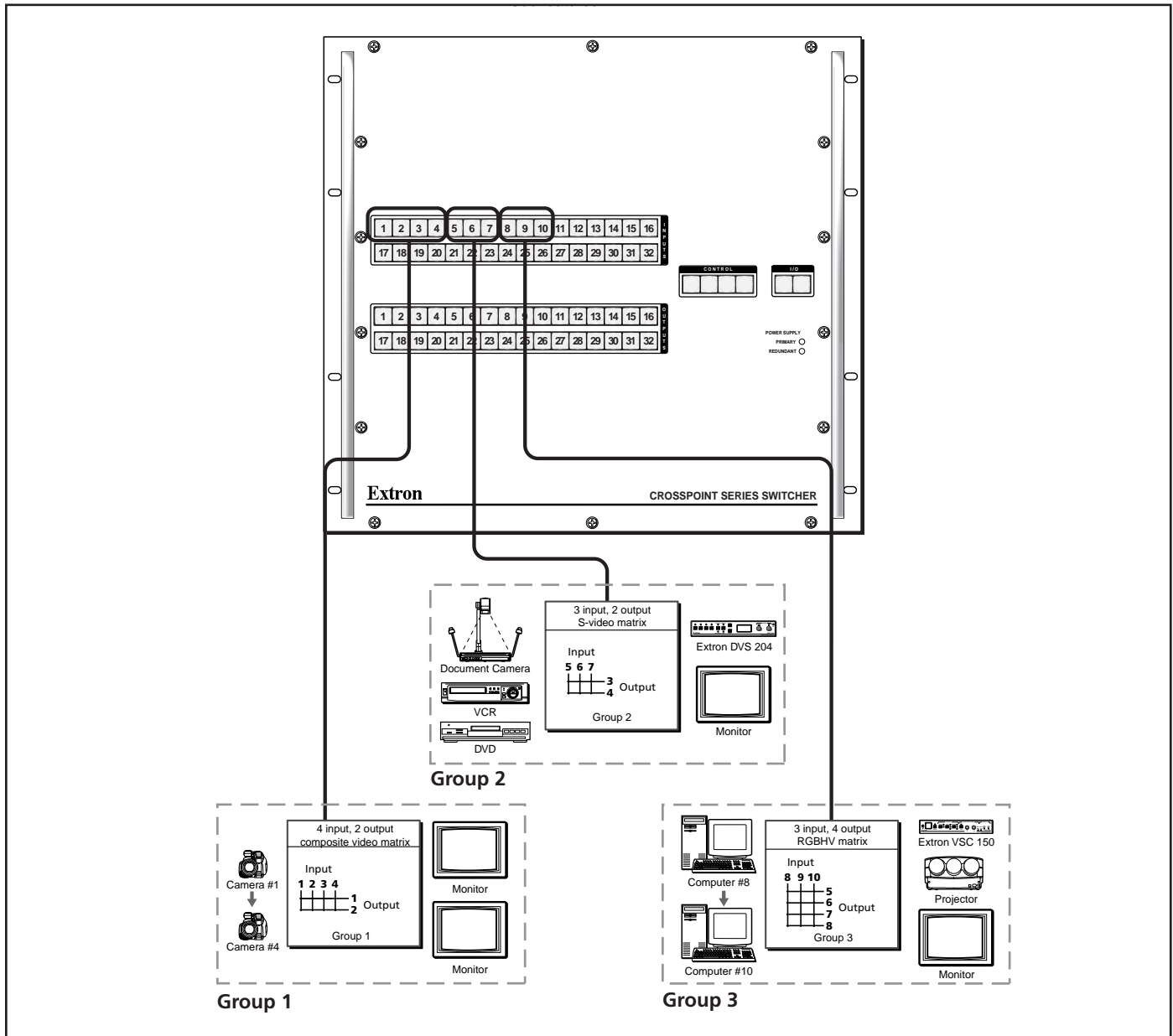
| 32 x 32 Ultra Wideband Matrix Switchers | Part Number |
|---|-------------|
| CrossPoint Plus 3232HV .....            | 60-469-02   |
| CrossPoint Plus 3232HVA .....           | 60-469-01   |

# DESCRIPTION

The Extron **CrossPoint Plus Series** offers ten models of ultra-wideband matrix switchers for routing analog RGBHV video signals: 8x4 (CrossPoint Plus 84), 8x8 (CrossPoint Plus 88), 12x4 (CrossPoint Plus 124), 12x8 (CrossPoint Plus 128), 16x8 (CrossPoint Plus 168), 16x16 (CrossPoint Plus 1616), 24x12 (CrossPoint Plus 2412), 24x24 (CrossPoint Plus 2424), 32x16 (CrossPoint Plus 3216), and 32x32 (CrossPoint Plus 3232). Each model offers two versions: "HV" versions for switching RGBHV signals and "HVA" versions for switching RGBHV signals and two channel stereo audio (balanced and unbalanced). All models can also switch RGBS, RGsB, HDTV, component video, S-video, and composite video. Each input and output is individually isolated and buffered. These input(s) can be switched to any one or all outputs with virtually no crosstalk or signal noise between channels.

Housed in a rack-mountable, 19 inch wide enclosure, the CrossPoint Plus Series includes RS-232/422 capability. The unique advantage of the RS-232/422 control is the Extron Simple Instruction Set (SIS™). These instructions are simple to use, easy to read, ASCII command codes. All models come standard with the QuickSwitch Front Panel Controller (QS-FPC™), which allows for touch-of-a-button input and output selection directly from the front panel. It can also be controlled utilizing the Extron MCP 1000 control panel or MKP 1000 control keypad. Larger models (24x12, 24x24, 32x16, and 32x32) feature IP Control for off-site control through an Ethernet port, as well as downloadable firmware upgrades from the Internet via RS-232.

## APPLICATION DIAGRAM



**I/O grouping** – Allows the matrix to be virtually divided into smaller sub-switchers, making installation and control easier. I/O grouping allows specific outputs to be grouped together—such as those designated for a specific video format.

## VIDEO

|                                     |  |
|-------------------------------------|--|
| Routing .....                       | 84 Series: 8 x 4 matrix<br>88 Series: 8 x 8 matrix<br>124 Series: 12 x 4 matrix<br>128 Series: 12 x 8 matrix<br>168 Series: 16 x 8 matrix<br>1616 Series: 16 x 16 matrix<br>2412 Series: 24 x 12 matrix<br>2424 Series: 24 x 24 matrix<br>3216 Series: 32 x 16 matrix<br>3232 Series: 32 x 32 matrix |
| Gain .....                          | Unity  |
| Bandwidth .....                     | 425 MHz (-3dB), fully loaded   |
| Crosstalk .....                     |  |
| 84/88/124/128/168/1616 Series ..... | -80dB @ 1 MHz, -65dB @ 10 MHz,<br>-55dB @ 30 MHz, -42dB @ 100 MHz  |
| 2412/2424/ 3216/3232 Series .....   | -55dB @ 10 MHz, -45dB @ 30 MHz,<br>-37dB @ 100 MHz   |
| Switching speed .....               | 200 ns (max.)  |

## VIDEO INPUT

|                              |  |
|------------------------------|--|
| Number/signal type .....     | 8, 12, 16, 24, or 32 RGBHV, RGBS, RGSBs, RsGsBs, HDTV, component video, S-video, composite video |
| Connectors .....             | 8, 12, 16, 24, 32 x 5 are female   |
| Minimum/maximum levels ..... | Analog -0.5V to 2.0V p-p with no offset  |
| Impedance .....              | 75 ohms  |
| Return loss .....            | -30dB @ 5 MHz  |
| Maximum DC offset .....      | 1.5V   |

## VIDEO OUTPUT

|                             |   |
|-----------------------------|---|
| Number/signal type .....    | 4, 8, 12, 16, 24, or 32 RGBHV, RGBS, RGSBs, RsGsBs, HDTV, component video, S-video, composite video |
| Connectors .....            | 4, 8, 12, 16, 24, 32 x 5 BNC female   |
| Minimum/maximum level ..... | 2V p-p  |
| Impedance .....             | 75 ohms   |
| Return loss .....           | -30dB @ 5 MHz   |
| DC offset .....             | ±5mV maximum with input at 0 offset   |
| Switching type .....        | Triple-Action™  |

## SYNC

|                                   |   |
|-----------------------------------|---|
| Input type .....                  | RGBHV, RGBS, RGSB, RsGsBs   |
| Output type .....                 | RGBHV, RGBS, RGSB, RsGsBs   |
| Input level .....                 | 0.5V to 5.0V p-p, 4.0V p-p normal   |
| Output level .....                | AGC to TTL: 4V to 5V p-p  |
| Input impedance .....             |   |
| 84/88/124/128 Series Inputs ..... | 1 to 4: 75 or 510 ohms, switchable<br>Inputs 5 to 12: 510 ohms                              |
| 168/1616 Series .....             | Inputs 1, 3, 5, 7: 75 or 510 ohms, switchable<br>Inputs 2, 4, 6, 8, and 9 to 16<br>510 ohms |
| 2412/2424/3216/ 3232 Series ..... | Inputs 1 to 8: 75 or 510 ohms, switchable<br>Inputs 9 to 32: 510 ohms                       |
| Output impedance .....            | 75 ohms   |
| Polarity .....                    | Positive or negative (follows input)  |

## AUDIO — AUDIO MODELS ONLY

|                          |  |
|--------------------------|--|
| Routing .....            | Same as video routing  |
| Gain .....               | Unbalanced 0dB, balanced +6dB  |
| Frequency response ..... | 20 Hz to 20 kHz, ±0.05dB THD +                                       |
| Noise .....              | 0.03% @ 1 kHz at rated maximum output drive                          |
| S/N .....                | >90dB, balanced, at rated maximum output drive (21dBu)               |
| Crosstalk .....          | <-80dB @ 1 kHz, fully loaded Stereo channel separation >80dB @ 1 kHz |
| CMRR .....               | >75dB @ 20 Hz to 20 kHz  |

## AUDIO INPUT — AUDIO MODELS ONLY

|                          |  |
|--------------------------|--|
| Number/signal type ..... | 8, 12, 16, 24, or 32 stereo, balanced/unbalanced             |
| Connectors .....         | 8, 12, 16, 24, or 32 3.5 mm captive screw connectors, 5 pole |

|                                     |  |
|-------------------------------------|--|
| Impedance .....                     | >10 kohm, balanced/unbalanced, DC coupled                    |
| Maximum level .....                 | +19.5dBu, (balanced or unbalanced) at stated %THD+N          |
| Input gain adjustment .....         |  |
| 84/88/124/128/168/1616 Series ..... | -15dB to +9dB, adjustable per input by RS-232 or front panel |
| 2412/2424/3216/3232 Series .....    | -24dB to +9dB, adjustable per input by RS-232 or front panel |

## AUDIO OUTPUT — AUDIO MODELS ONLY

|                               |   |
|-------------------------------|---|
| Number/signal type .....      | 4, 8, 12, 16, 24, or 32 stereo, balanced/unbalanced             |
| Connectors .....              | 4, 8, 12, 16, 24, or 32 3.5 mm captive screw connectors, 5 pole |
| Impedance .....               | 50 ohms unbalanced, 100 ohms balanced                           |
| Gain error .....              | ±0.1dB channel to channel                                       |
| Maximum level (Hi-Z) .....    | >+21dBu, balanced or unbalanced at stated %THD+N                |
| Maximum level (600 ohm) ..... | >+15dBm, balanced or unbalanced at stated %THD+N                |

NOTE: 0dBu = 0.775 volts (RMS).

## CONTROL/REMOTE — SWITCHER

|   |  |
|---|--|
| Serial control port .....               | 1 RS-232 or RS-422, 9-pin female D connector   |
| Baud rate and protocol .....            | 9600, 8-bit, 1 stop bit, no parity   |
| Serial control pin configurations ..... | 2 = TX, 3 = RX, 5 = GND  |
| Ethernet control port .....             | 2412/2424/3216/3232 Series only:<br>1 RJ-45 female connector   |
| Ethernet data rate .....                | 2412/2424/3216/3232 Series only:<br>10/100Base-T, half/full duplex with autodetect   |
| Ethernet protocol .....                 | 2412/2424/3216/3232 Series only: ARP, ICMP (ping), TCP/IP, Telnet, HTTP  |
| Program control .....                   | 2412/2424/3216/3232 Series<br>Extron's control program for Windows®<br>Extron's Simple Instruction Set™ - SIS™<br>Microsoft Explorer, Netscape Navigator, Telnet |
| All other models .....                  | Extron's control program for Windows<br>Extron's Simple Instruction Set™ - SIS™  |

## GENERAL

|                                  |  |
|----------------------------------|--|
| Power .....                      | 100VAC to 240VAC, 50/60 Hz, internal, auto switchable<br>84/88/124/128: 30 watts<br>168/1616: 36 watts<br>2412/2424 Series: 150 watts<br>3216/3232 Series: 180 watts |
| Rack mount .....                 | Yes, with included parts   |
| Enclosure type .....             | Metal  |
| Enclosure dimensions .....       |  |
| 84/88/124/128 Series .....       | 5.25" H x 17.0" W x 9.4" D (3U high, full rack width) 13.3 cm H x 43.2 cm W x 23.9 cm D  |
| 168/1616 Series .....            | 10.5" H x 17.0" W x 9.7" D (6U high, full rack width) 26.7 cm H x 43.2 cm W x 24.6 cm D  |
| 3216/2412 HV & HVA Series .....  | 14.0" H x 17.0" W x 12.0" D (8U high, full rack width) (35.5 cm H x 43.2 cm W x 30.5 cm D)   |
| 3232/2424 HV & HVA Series .....  | 17.5" H x 17.0" W x 12.0" D (10U high, full rack width) (44.5 cm H x 43.2 cm W x 30.5 cm D) (Depth excludes connectors. Width excludes rack ears.)                   |
| Shipping weight .....            |  |
| 84/88/124/128 Series .....       | 21 lbs (9.5 kg) DIM weight 25  |
| 168/1616 Series .....            | 26 lbs (11.8 kg) DIM weight 34   |
| 2424/3232 Series .....           | 40 lbs (18.1kg)  |
| 2412/3216 Series .....           | 35 lbs (15.9 kg)   |
| Listings .....                   | UL, CUL  |
| Compliances .....                |  |
| 2412/2424/3216/3232 Series ..... | CE, FCC Class A, VCCI, AS/NZS, ICES  |
| All other models .....           | CE, FCC Class A  |

# FEATURES

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- **Ultra-wideband video bandwidth** – The Extron CrossPoint Plus Series provides a minimum of 425 MHz (-3dB) RGB video bandwidth, fully loaded. Designed for resolutions from 1280x1024 and up, the CrossPoint Plus Series maintains original signal integrity without degradation of the signal.
- **Digital Sync Validation Processing (DSVP™)** – Extron's exclusive DSVP verifies active sources by scanning all inputs for active sync signals. DSVP then transmits the horizontal and vertical scan rate information to the user via any type of control system using RS-232/422 commands.
- **Channel to channel isolation** – The CrossPoint Plus Series provides excellent isolation between channels and extremely low electromagnetic emissions—perfect for minimizing signal leakage in high security or government environments.
- **I/O grouping** – Allows the matrix to be virtually divided into smaller sub-switchers, making installation and control easier. I/O grouping allows specific outputs to be grouped together—such as those designated for a specific video format.
- **Buffered I/O** – Each input, as well as each output, of the CrossPoint Plus Series is individually buffered to provide maximum performance and virtually no crosstalk.
- **RGBHV** – The CrossPoint Plus HV models switch separate horizontal and vertical sync to ensure proper sync polarity, providing a more stable image. All models also switch RGBS, RGsB, HDTV, S-video, and composite video.
- **Triple-Action Switching™ (RGB delay)** – RGB delay blanks the screen when the matrix switcher switches to a new source. The new sync signals precede the RGB signals, so there is no glitch shown during the transition. The time delay between the RGB and sync signals is user adjustable up to five seconds.
- **QuickSwitch Front Panel Controller (QS-FPC™)** – The QS-FPC feature allows for touch-of-a-button input and output selection. Extron's QuickSwitch technology eliminates the learning curve usually associated with switching the inputs and outputs of a matrix switcher by using a tactile switch front panel button for every input and output.
- **Front panel I/O label windows** – I/O buttons may easily be labeled by any Brother® P-Touch™ labeler or Extron label software, which ships with every Extron matrix switcher. Each input and output can be labeled with names, alphanumeric characters, or even color bitmaps for easy and intuitive input and output selection.
- **View I/O mode** – Allows user to easily see which individual inputs and outputs are actively connected. Available from the front panel or RS-232/422 control.
- **Global presets** – Individual I/O configurations may be saved and recalled either from the QuickSwitch front panel or RS-232/422. This time-saving feature allows you to set up I/O configurations and keep them in memory for future use.
- **RS-232/422 control** – The CrossPoint Plus Series switchers offer RS-232/422 control, allowing the switcher to be controlled via a third party control system. Extron's Simple Instruction Set (SIS™)—used for RS-232/422 control—is easy to learn, and use, and allows users to generate characters directly from a keyboard.
- **Simple Instruction Set (SIS)** – Extron SIS is a set of basic ASCII code commands that provide simple control through a third-party control system. Instead of programming in long, obscure strings of code, the SIS makes it easy to operate an Extron product using RS-232/422 control.
- **Control software** – For RS-232/422 remote control from a PC, Extron ships our Windows®-based control software with every matrix switcher. This icon-driven software uses a graphical, drag-and-drop interface to make I/O configuration and other customization functions simple and convenient. This software also offers an emulation mode for configuration of an offsite matrix switcher; the I/O configuration may then be saved for future downloading to the matrix switcher.
- **MCP 1000 and MKP 1000 control** – Utilizing the MCP 1000 master control panel and any combination of MCP 1000 slave control panels or MKP 1000 control keypads offers the flexibility to control a CrossPoint Plus Matrix Switcher from a remote location or room. Both remote control options are easy to use and provide tactile buttons for quick selection. Each MCP 1000 panel may be used for one-button switching for a particular output and selecting global presets. Each MKP 1000 keypad may be used to select a different input or select a preset.
- **Audio gain/attenuation (adjustable via RS-232/422 or front panel)** – Allow users to set the level of audio gain or attenuation (-15dB to +9dB). Individual input audio levels may be adjusted so there are no noticeable volume differences between sources.
- **Front panel security lockout** – If a CrossPoint Plus Series Switcher is installed in an unsecured environment where easy access is not desirable, a security lock-out feature may be implemented. During lock-out mode, a special button combination is required to operate the front panel controller.
- **Internal international power supply** – The 100-240 volt, auto switchable, internal power supply of the CrossPoint Plus Series provides worldwide power compatibility.

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## EXCLUSIVE TO LARGER MODELS

- **Audio output volume adjustment and muting** – Each individual output has volume control adjustment via the front panel or RS-232 control. Audio output levels can be set dynamically at different levels to feed the audio amplifier, thus eliminating the need for a pre-amplifier.
- **Redundant power supplies** – Primary and back-up power supplies for both positive and negative DC voltages are internally mounted. The primary power supply system is configured to support automatic fail-over switch to a hot spare power supply. This means zero downtime for the system and no loss of functionality should the primary power supply fail.
- **Downloadable firmware updates** – The newest firmware can be conveniently downloaded from the Extron Web site. Updates for new features and capabilities can be easily upgraded through the RS-232/RS-422 or Ethernet port.
- **IP (Ethernet) Control** – Extron's Direct IP control provides connectivity via any Ethernet network or TCP/IP connection. Direct IP enables the product to be accessed from anywhere on the network—from multiple sites or even over the Internet.
- **Web Page Serving Capabilities** – Extron's Direct IP control provides web hosting with online pages for full functionality and monitoring of the product via any web browser. In addition, custom web pages can be produced with any off-the-shelf web page development software program to create your own HTML pages or java applets.



# Matrix Switcher Cross-Reference

| Matrix Switcher<br>Cross-Reference       |  |  |  | Ins & Outs                          |         | Video Formats  |  |                 |  | Audio                            |  |                                     |  | Features        |  |                                    |  |         |  |                               |  |                             |  |                                    |  |            |  |   |  |   |  |                 |  |                                  |  |   |  |                                    |  |               |  |              |  |                             |  |                          |  |          |  |                                     |  |   |  |                              |  |                        |  |  |  |                         |  |            |  |                  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |    |  |
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|  |  |  |  | Bandwidth (MHz, -3dB), Fully Loaded |         | Maximum Inputs |  | Maximum Outputs |  | Modular Design, Field Expandable |  | SDI Digital Video w/enabled AES/EBU |  | HDTV Compatible |  | Composite Video (NTSC, PAL, SECAM) |  | S-video |  | Component Video (Y, R-Y, B-Y) |  | RGsB, RsGsBs, RGbS, & RGBHV |  | Balanced & Unbalanced Stereo Audio |  | Audio Mute |  | Adjustable Input Audio Gain/Attenuation |  | Adjustable Output Audio Level/Attenuation |  | Audio Breakaway |  | Memory Presets (Room and Global) |  | Label Windows For I/Os (DSVP <sup>®</sup> ) |  | Digital Sync Validation Processing |  | I/O Breakaway |  | I/O Grouping |  | Vertical Interval Switching |  | Triple Action Switching* |  | RGB Mute |  | Optional LCD Front Panel Controller |  | QuickSwitch Controller (QS-FPC <sup>®</sup> ) |  | Front Panel Security Lockout |  | Redundant Power Supply |  | Simple Instruction Set (SIS <sup>™</sup> ) |  | RS-232 / RS-422 Control |  | IP Control |  | Rack Unit Height |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |    |  |
| ISM Series (Seamless Scaled RGB & Video) |  |  |  | ISM 182                             | ISM 482 |                |  |                 |  |                                  |  |                                     |  |                 |  |                                    |  |         |  |                               |  |                             |  |                                    |  |            |  |   |  |   |  |                 |  |                                  |  |   |  |                                    |  |               |  |              |  |                             |  |                          |  |          |  |                                     |  |   |  |                              |  |                        |  |  |  |                         |  |            |  |                  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | </ |  |

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